WHAT IS CLAIMED IS:

1. A composition for clay stabilization in a sub-surface formation, the composition comprising one or more polymers selected from the group consisting of poly(dimethylaminoethylmethacrylate quaternary salt), poly(dimethylaminoethylacrylate quaternary salt) and dimethylaminoethylmethacrylate quaternary salt-dimethylaminoethylacrylate quaternary salt copolymer, wherein the polymers have a molecular weight of about 1,000 to about 100,000.

2. The composition of Claim 1 wherein the polymers have a molecular weight of about 1,000 to about 10,000.

3. The composition of claim 2 wherein the polymers are selected from the group consisting of poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt), poly(dimethylaminoethylacrylate dimethylsulfate quaternary salt) and dimethylaminoethylmethacrylate methyl chloride quaternary salt-dimethylaminoethylacrylate methyl chloride quaternary salt copolymer.

4. The composition of Claim 1 comprising an aqueous solution of poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt).

5. The composition of Claim 1 further comprising one or more ingredients in addition to the polymer, wherein the ingredients are selected from the group consisting of viscosifying agents, crosslinking agents, bactericides, breakers, ion control agents, foaming agents, a gas stabilizers and liquefied gas stabilizers and combinations thereof.

6. The composition of Claim 1 wherein the composition is in a form selected from the group consisting of a solution, an emulsion and a powder.

7. A stimulation fluid comprising an aqueous solution of one or more polymers selected from the group consisting of poly(dimethylaminoethylmethacrylate quaternary salt), poly(dimethylaminoethylacrylate quaternary salt) and dimethylaminoethylmethacrylate quaternary salt-dimethylaminoethylacrylate quaternary salt copolymer, wherein the polymers have a molecular weight of about 1,000 to about 10,000.

8. The stimulation fluid of Claim 7 wherein the polymers have a molecular weight of about 1,000 to about 10,000.

9. The stimulation fluid of claim 8 wherein the polymers are selected from the group consisting of poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt), poly(dimethylaminoethylacrylate dimethylsulfate quaternary salt) and dimethylaminoethylmethacrylate methyl chloride quaternary salt-dimethylaminoethylacrylate methyl chloride quaternary salt copolymer.

10. The stimulation fluid of Claim 7 comprising an aqueous solution of poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt).

11. The stimulation fluid of Claim 10 comprising up to about four gallons of the poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt) solution per 1,000 gallons of stimulation fluid.

12. The stimulation fluid of Claim 10 comprising about one to about two gallons of the poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt) solution per 1,000 gallons of stimulation fluid.

13. The stimulation fluid of Claim 7 further comprising one or more ingredients selected from the group consisting of viscosifying agents, crosslinking agents, bactericides, breakers, ion control agents, foaming agents, gas stabilizers and liquefied gas stabilizers and combinations thereof.

14. A method of stabilizing a clay-containing formation during a sub-surface well stimulation process, the method comprising the steps of:

(i) providing a stimulation fluid comprising an aqueous solution of one or more polymers selected from the group consisting of poly(dimethylaminoethylmethacrylate quaternary salt), poly(dimethylaminoethylacrylate quaternary salt) and dimethylaminoethylmethacrylate quaternary salt-dimethylaminoethylacrylate quaternary salt copolymer, wherein the polymers have a molecular of about 1,000 to about 100,000; and

(ii) contacting the sub-surface with the stimulation fluid.

15. The method of Claim 14 wherein the polymers have a molecular weight of about 1,000 to about 10,000.

16. The method of claim 15 wherein the polymers are selected from the group consisting of poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt), poly(dimethylaminoethylacrylate dimethylsulfate quaternary salt) and dimethylaminoethylmethacrylate methyl chloride quaternary salt-dimethylaminoethylacrylate dimethyl methyl chloride quaternary salt copolymer.

17. The method of Claim 16 wherein the stimulation fluid comprises an aqueous solution of poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt).

18. The method of claim 16 wherein the stimulation fluid of comprises up to about four gallons of the poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt) solution per 1,000 gallons of stimulation fluid.

19. The method of claim 16 wherein the stimulation fluid comprises about one to about two gallons of the poly(dimethylaminoethylmethacrylate methyl chloride quaternary salt) solution per 1,000 gallons of stimulation fluid.

20. The method of Claim 14 wherein the stimulation fluid further comprises one or more components selected from the group consisting of viscosifying agents, crosslinking agents, bactericides, breakers, ion control agents, foaming agents, gas stabilizers and liquefied gas stabilizers and combinations thereof.